6ᵗʰ Grade Unit 3: Fraction Operations

Prerequisite Skills:
- Prime and composite numbers
- Identifying factors of whole numbers
- Identifying multiples of whole numbers
- Multiplication of multi-digit whole numbers
- Division of multi-digit whole numbers

UNIT OVERVIEW: In this unit students will be exploring all four **operations** with **fractions**, and **mixed numbers**. Students should have already worked on these skills in 5ᵗʰ grade; specifically, addition, subtraction and multiplication. Students will need to understand and apply the correct steps for completing each operation. A **common denominator** is required when adding or subtracting fractions, therefore students need to apply their knowledge of **multiples** from Unit 1. For all operations, it is important the answer is in **simplest form**. This will require students to utilize their knowledge of **common factors** for Unit 1. Throughout the unit, students will be applying their understanding of the operations with fractions to solve real world word problems.

Learning Target 1: I can add and subtract fractions.	5.NF.1, 5.NF.2
	Example
☑ A) Identify common multiples in order to identify a common denominator	$\frac{1}{3} + \frac{5}{8} =$ 3: 3, 6, 9, 12, 15, 18, 21, 24, 27 8: 8, 16, 24, 32 LCM = 24
☑ B) Correctly add or subtract the given fractions and simplifying the answer if possible	$\frac{1}{3} + \frac{5}{8} =$ $\frac{1}{3} \times \frac{8}{8} = \frac{8}{24}; \frac{5}{8} \times \frac{3}{3} = \frac{15}{24}$ $\frac{8}{24} + \frac{15}{24} = \frac{23}{24}$

Learning Target 2: I can add and subtract mixed numbers.	5.NF.1, 5.NF.2
	Example
☑ A) Identify common multiples in order to identify the common denominator	$1\frac{1}{2} - \frac{3}{5} =$ 2: 2, 4, 6, 8, 10 5: 5, 10 LCM = 10
☑ B) Correctly add or subtract the given fractions, including borrowing if necessary, and simplifying the answer if possible	$1\frac{1}{2} - \frac{3}{5} =$ $\frac{1}{2} \times \frac{5}{5} = \frac{5}{10}; \frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$ $1\frac{1}{2} - \frac{3}{5} = 1\frac{5}{10} - \frac{6}{10} = \frac{15}{10} - \frac{6}{10} = \frac{9}{10}$

Learning Target 3: I can multiply fractions and mixed numbers.	5.NF.4
	Example
☑ A) Convert mixed numbers into improper fractions if necessary, and complete the steps for multiplying fractions, simplify the answer if possible	$1\frac{2}{3} \times 2\frac{5}{6} =$ $1\frac{2}{3} = \frac{5}{3}$ because 3 × 1 + 2 = 5 $2\frac{5}{6} = \frac{17}{6}$ because 6 × 2 + 5 = 17 $\frac{5}{3} \times \frac{17}{6} = \frac{85}{18} = 4\frac{13}{18}$

Learning Target 4: I can divide a fraction by a fraction.	6.NS.1
	Example
☑ A) Correctly complete the steps for dividing fractions	$\frac{5}{6} \div \frac{1}{4} =$ $\frac{5}{6} \times \frac{4}{1} = \frac{20}{6} = 3\frac{2}{6} = 3\frac{1}{3}$

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Learning Target 5: I can divide a mixed or whole number by a fraction.   6.NS.1

	Example
☑ A) Change any mixed numbers into improper fractions and correctly complete the steps for dividing fractions	$4\frac{1}{3} \div \frac{2}{5} =$ $4\frac{1}{3} = \frac{13}{3}$ $\frac{13}{3} \div \frac{2}{5} =$ $\frac{13}{3} \times \frac{5}{2} = \frac{65}{6} = 10\frac{5}{6}$

Learning Target 6: I can divide a fraction by a mixed or whole number.   6.NS.1

	Example
☑ A) Change any mixed numbers into improper fractions and correctly complete the steps for dividing fractions	$\frac{1}{6} \div 2 =$ $2 = \frac{2}{1}$ $\frac{1}{6} \div \frac{2}{1} =$ $\frac{1}{6} \times \frac{1}{2} = \frac{1}{12}$

Learning Target 7: I can solve real world problems involving fractions.   MP. 1, MP. 7

	Explanation
☑ A) Use math vocabulary and/or real life applications to select the correct operation and create an accurate number sentence; especially involving subtraction and division where the order matters	Recognizing key words… Sum, difference, product, quotient and real life application of those words Identifying what the first number should be when subtracting or dividing

Vocabulary			
Numerator	Denominator	Product	Quotient
Sum	Difference	Fraction	Mixed Number
Factor	Multiple	Simplest form	Simplify

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Department Assessments	

Mastery Quizzes
   ▪ **Mastery Quiz #1:**
    ✓ I can add and subtract fractions
    ✓ I can add and subtract mixed numbers
    ✓ I can multiply fractions and mixed numbers
   ▪ **Mastery Quiz #2:**
    ✓ I can divide a fraction by a fraction
    ✓ I can divide a whole or mixed number by a fraction
   ▪ **Mastery Quiz #3:**
    ✓ I can divide a fraction by a whole or mixed number.
    ✓ I can solve real world problems involving fractions.
	Dates
	  ▪
	
	  ▪
	
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Unit Test
   ▪ Part A: Department Wide: Multiple Choice
	Dates
	  ▪

Performance Task
   ▪ Part B: Teacher Created: Extended Response
	Dates
	  ▪

Products	
Culminating Project	
▪	▪ Given: ▪ Due:

Any adjusted dates or changes in this unit's outline will be noted on our online gradebook. Please contact the teacher if you do not have your log in information.

Please feel free to contact the teacher with any further questions or concerns!